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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/091,044 | 03/04/2002 | Timothy J. Shepodd | SD-8345 | 6501 |

7590 10/03/2003

TIMOTHY P. EVANS
Sandia National Laboratories
MS 9031
7011 East Avenue
Livermore, CA 94550

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| EXAMINER |
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THEXTON, MATTHEW

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| ART UNIT | PAPER NUMBER |
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1714

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

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|--------------------|----------------|--|
| Application No. | Applicant(s) | |
| 10/091,044 | SHEPODD ET AL. | |
| Examiner | Art Unit | |
| Matthew A. Thexton | 1714 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8 September 2003 has been entered.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepodd, et al. (US 5624598) in view of Streitwieser, Jr., et al. and Morikawa, et al. (US 6018048).

The Shepodd reference discloses the general application of gettering hydrogen using an appropriately matched hydrogenation catalyst and hydrogenation susceptible compound. Further, the reference discloses systems which employ high surface area carriers and/or binders and fillers to permit utility in various environments. This reference appears to disclose all of the elements of all of the claims except for the particular hydrogenation susceptible compound, the polyphenyl ether. Shepodd discloses methods absorbing (claims 12-22) comprising "providing."

The Streitwieser reference discusses the well known catalytic hydrogenation chemistry of substituted benzenes, setting forth the caveat that some functional groups will hydrogenate preferentially, including "COR" which is an ether.

The Morikawa reference discloses catalytic hydrogenation of phenyl ether to saturate the aromatic portion (column 9, line 39 and 43) and employs temperatures up to 300 degree Celsius (column 12, lines 20-33). The ethers suggested in Morikawa actually are derivatives of benzene, since it is the aromatic functionality which is the focus of the hydrogenation (column 9, lines 17-20). In view of Morikawa et al., the Streitwieser, Jr., et al. caveat is not a counter suggestion when the ether is bis-phenyl, rather it suggests that the aromatic or double bonds will preferentially hydrogenate. In view of the references taken together, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed poly-phenyl ethers as catalytic hydrogenation compounds in the techniques taught by Shepodd et al. in order to obtain their higher temperature stability and with a reasonable expectation of success. The claims include a limitation that the polyphenyl ether is comprised of at least 3 basic structural units. While this is different than the bis-phenyl ether specifically set forth in Morikawa et al., it is clear that the Morikawa reference stands for all its teachings, not just the exemplified or listed species. Poly-phenyl ether is so structurally similar to diphenyl ether and is suggested by the broad class of compounds "benzene and its derivatives" (column 9, lines 19-20) that it would be an obvious variation and choice due to its close chemical structure.

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Morikawa et al. teach hydrogen partial pressure of about one atmosphere or higher for the method. This is not a point of distinction for the claimed compositions or the methods as claimed. There is no hydrogen pressure present in the claims. The claim limitation to a capability or property does not overcome the prima facie case of obviousness since the capability is not being employed in the methods and the capability is inherent to the composition. It is well established that new uses or properties do not lend patentability to otherwise old or obvious compositions.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 703-305-5085. The examiner can normally be reached on Monday-Thursday, 8:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S Jagannathan can be reached on 703-306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Matthew A. Thexton
Primary Examiner
Art Unit 1714